REMARKS

Reconsideration and allowance of this application are respectfully requested in light of the following remarks.

The Applicants acknowledge with appreciation the indication in the Office Action that claims 46, 47, and 55-57 are directed to allowable subject matter and would be allowed if placed in independent form. However, it is submitted that the present independent claims are allowable, so that claims 46, 47, and 55-57 have not been amended.

It is noted that the previous rejections have been withdrawn and new rejections are asserted.

Claims 38-45, 48, 51-54, 58-63 and 75 are now rejected under 35 USC §103(a), as being unpatentable over Love et al. (US 2004/0219920) in view of Legg et al. (US 6 414 947). Dependent claim 49 is now rejected under 35 USC §103(a), as being unpatentable over Love et al. (US 2004/0219920) in view of Legg et al. (US 6 414 947), and further in view of Seo et al. (US 2003/01851559). Dependent claim 50 is now rejected under 35 USC §103(a), as being unpatentable over Love et al. (US 2004/0219920) in view of Legg et al. (US 6 414 947), and further in view of Zhang et al. (US 2005/0094600). The Applicants respectfully traverse these rejections as follows.

Claim 38 defines a method for communicating information relating to the scheduling of uplink data transmissions. In this method, a mobile terminal uses a plurality of Hybrid Automatic Repeat reQuest (HARQ) processes to transmit uplink data via an Enhanced Uplink Dedicated Channel of a Universal Mobile Telecommunication System (UMTS) to a plurality of base stations during soft handover of the mobile terminal and at least one base station of the

plurality of base stations schedules uplink data transmissions of the mobile terminal in soft handover. The method of claim 38 includes operations wherein at least one scheduling base station among the plurality of base stations (1) determines scheduling information for the mobile terminal indicative of allocated maximum amount of uplink resources applicable to the individual HARQ processes used for uplink data transmission, and (2) transmits information to at least one other base station of the plurality of base stations to inform the at least one other base station with respect to the applicability of allocated maximum amount of uplink resources for uplink data transmissions on the individual HARQ processes. The method further includes an operation wherein the at least one other base station schedules at least one other mobile terminal in communication with a respective base station based on the information received from the scheduling base station.

In brief, according to the invention of claim 38, the at least one scheduling base station (first base station) determines scheduling information for a mobile terminal (first mobile terminal) indicative of an allocated maximum amount of uplink resources applicable to the individual HARQ processes used for uplink data transmission. The scheduling base station (first base station) transmits scheduling information indicative of allocated maximum amount of uplink resources to at least one other base station (second base station) which is part of the first mobile terminal's active set. The scheduling base station (first base station) schedules communication with the first mobile terminal based on the scheduling information, and the other base station (second base station) schedules communication with a different mobile terminal (second mobile terminal) based on the scheduling information received from the scheduling base station. In this way, the scheduling base station transmits information to the other base station to

inform the other base station with respect to the applicability of an allocated maximum amount of uplink resources for uplink data transmissions on the individual HARQ processes. In at least some instances, the claimed subject matter increases the efficiency of soft handover by providing coordination among multiple base stations (see specification paragraph [0095]).

The Office Action alleges (see page 3, lines 17-19) that the only difference between the disclosure of Love et al. and the Applicants' claim 38 is that the scheduling base station transmits scheduling information to the other base station in claim 38 (and not the mobile station as in Love et al.). In an attempt to cure this deficiency, the Office Action (see page 3, lines 19-22) relies on Legg et al. for a disclosure of transmitting information from at least one scheduling base station to at least one other base station, citing col. 6, lines 15-34.

It is respectfully submitted that the position taken in the Office Action reflects a misapprehension of the teachings of Love et al. and Legg et al. and the present claimed invention, and that these references, considered individually or together, fail to teach or suggest numerous aspects of Applicants' claim 38, as will be apparent form the discussion below.

One of the more salient distinctions of claim 38 over Love et al. and Legg et al., is that in claim 38, a scheduling (first) base station transmits scheduling information to another (second) base station, and the scheduling base station schedules communication with a first mobile terminal based on the coordinated scheduling information and the other base station schedules communication with a second mobile terminal (different from the first mobile terminal) based on the coordinated scheduling information. The Office Action does not even allege that any of the applied references discloses or suggests this subject matter. Accordingly, this distinction alone is sufficient to overcome the pending rejections. However, there are numerous deficiencies of the

applied references that render the present rejections untenable, as is discussed in detail below.

Love et al. addresses problems stemming from an autonomous transmission mode of the mobile station (MS). If the mobile station autonomously decides when to transmit data (autonomous mode), the mobile station needs to determine a transmission rate given the constraints of a maximum rate or equivalently a maximum power margin indicated by the scheduler and the amount of data in its buffer. This is particularly important when the mobile station is in a multi-coverage area served by multiple cells where, in a CDMA system, such a MS is typically in soft handoff with any of the said multiple cells if more than one are members of the mobile station's current Active Set. Love et al. notes that the prior state of the art did not consider the amount of interference created during soft handoff and its affect on adjacent cells and concludes that there exists a need for the mobile station to consider the impact on all adjacent cells (typically cells in its active or neighbor set), and not just the best serving or scheduling Active Set cell, such that uplink voice and other signaling coverage is not significantly impacted (see paragraphs [0018] and [0019]).

In view of this alleged shortcoming of the prior art, Love et al. proposes a system wherein a mobile station determines a maximum transmission rate on an enhanced uplink channel while also considering the impact of this selected maximum data rate on all adjacent cells (typically cells in its active or neighbor set), and not just the best serving (target cell) or scheduling Active Set cell, such that uplink voice and other signaling coverage is not significantly impacted. This is achieved by taking into account corrections due to power control commands from the base station, not only from the scheduling cell but also the Active Set of cells (see paragraphs [0001] and [0028]).

Love et al. further mentions that the mobile station transmits so-called "scheduling information" to the base stations of the Active Set, which includes a queue status and a power status of the mobile station (see paragraphs [0030], [0042], [0043]; Fig. 4, ref. no. 402). Based on the respective scheduling information (i.e. the queue status and the power status of the mobile station) received from the mobile station, the base stations (BTS) of the Active Set each determine a scheduling assignment for the mobile station, which are sent to the mobile station, i.e. the mobile station receives one or more scheduling assignments (see paragraphs [0030], [0031], [0041]). The scheduling assignments indicate respective maximum allowed power margin target or limit (see paragraphs [0041] and [0042]).

In Love et al., when receiving multiple scheduling assignments, the mobile station is selecting (i.e. obeys) the scheduling assignment corresponding to the "best TFRI." For this purpose, the mobile station determines the TFRI for each EUDCH sub-frame based on the interference information (maximum allowed power margin limit) from the selected scheduling assignment and the current scheduling information measured at the mobile station, i.e., current data queue and power status or power margin, and transmits the EUDCH sub-frame using the selected TFRI (see paragraphs [0046] and [0039]).

However, in Love et al.'s specification, it is ambiguous what is to be understood under the term "best TFRI." As can be recognized from paragraph [0047] – particularly the last lines thereof – and paragraph [0111], the mobile station selects the TFRI yielding the lowest data rate ("minimum value"), which is then used as the "maximum data rate" that the mobile station is allowed to use for a transmission in the EUDCH sub-frame. Hence, the "best TFRI" appears to refer to the TFRI yielding the lowest data rate – as the lowest data rate is selected, also

interference can be reduced.

In Love et al.'s system, in order to allow each of the Active Set base stations to decode each EUDCH sub-frame, the mobile station signals, associated to each transmission, the corresponding TFRI that is defining rate and modulation coding information and HARQ status of the respective information. The mobile station codes the TFRI and sends the TFRI over the same frame interval as the EUDCH sub-frame (see paragraph [0038]). As the TFRI is included to each respective transmission to each respective base station of the Active Set, a distributed scheduling function can be implemented (see paragraphs [0039], [0037] and [0016]).

With respect to instant claim 38, the Applicants respectfully submit that Love et al. fails to teach or suggest the step of "determining, at the at least one scheduling base station of said plurality of base stations, scheduling information for the mobile terminal indicative of allocated maximum amount of uplink resources applicable to the individual HARQ processes used for uplink data transmission." Paragraphs [0018], [0038] and [0039] of Love et al. cited in the Office Action do not to teach this feature, as these passages relate to the mobile terminal determining the "maximum data rate" to use in view of the multiple scheduling assignments received from the Active Set base stations (BTS), which bears no relevance to the noted feature of claim 38.

Furthermore, in Love et al., in the selection of the "maximum data rate," the mobile station actually selects the scheduling assignment that is indicating the "lowest value" (i.e. the lowest data rate) which is then defined as the "maximum data rate." Even if this "maximum data rate" were considered as corresponding to an amount of uplink resources, this "maximum data rate" is the allocated maximum amount of uplink resources, but actually the lowest allocated

amount of uplink resources.

More importantly, it should be noted that, in Love et al., the scheduling information of the mobile station is mobile station specific information indicating a "queue status," i.e., an amount of information pending for transmission at the mobile station, and a "power status," i.e., information on transmit power usage of the mobile station. These parameters are mobile terminal-specific that are used in scheduling (see for example paragraph [0030]: "determining an uplink channel scheduling assignment for the selected mobile station using at least one of the scheduling information"), but are themselves not indicative of an "allocated maximum amount of uplink resources applicable to the individual HARQ processes" as per the feature of Applicants' claim 38.

It is submitted that Love et al. also fails to teach or suggest the feature of claim 38 directed to "transmitting from at the at least one scheduling base station information to at least one other base station of said plurality of base stations to inform the at least one other base station on the applicability of allocated maximum amount of uplink resources for uplink data transmissions on the individual HARQ processes." The Office Action takes the position (see the Office Action, middle of page 3) that the base stations are provided with "scheduling information" from the mobile station. Accordingly, in view of the Office Action's acknowledged difference, the Office Action has taken the position that this is equivalent to the feature in question in instant claim 38 except for the information being transmitted by the scheduling base station to another base station.

However, as discussed above, the "scheduling information" mentioned in Love et al. is not (scheduling) information that is indicative of the allocated maximum amount of uplink

resources applicable to the individual HARQ processes. Hence, despite the fact that the information is transmitted from the mobile station in Love et al. and not the scheduling base station as in Applicants' claim 38, the scheduling information of Love et. al. is further not information that informs the at least one other base station on the applicability of allocated maximum amount of uplink resources for uplink data transmissions on the individual HARQ processes.

Furthermore, even if it were assumed *arguendo* that the scheduling assignments mentioned in Love et al. (see for example paragraphs [0030], [0041], [0042] and [0043]) correspond to scheduling information indicative of an allocated maximum amount of uplink resources, Love et al. nevertheless fails to teach that this information is signaled from one base station to another base station. In this respect it should be noted that Love et al., at paragraph [0037], points out that in case of using scheduling in the base stations (BTS), "[e]ach BTS 301-307 can include a scheduler, or scheduling function, 316 that alternatively can reside in the RNC 110. With BTS scheduling, each Active Set BTS [...] can choose to schedule the associated MS 1014 without need for communication to other Active Set BTSs based on scheduling information signaled by the MS to the BTS and local interference and SNR information measured at the BTS." This is also confirmed in paragraph [0016] of Love et al.

Hence, Love et al. explicitly mentions that the main advantage of using scheduling in the base stations is that no communication between the base stations is needed, which matches perfectly in the assumed network architecture shown in Fig. 5 of Love et al., where there is no direct interface between the base stations provided via which communication could occur (see also paragraph [0033]: "Communication system 1000 further includes a RNC 1010 coupled to

each BSS, preferably through a 3GPP TSG UTRAN Iub Interface, and a gateway 1012 coupled to the RNC.").

As a consequence, Love et al. must also *per force* fail to teach the remaining feature of claim 38 of "scheduling by the at least one other base station at least one other mobile terminal in communication with a respective base station based on the information received from the scheduling base station."

As indicated above, the gist of the use of base station scheduling according to Love et al. is that no communication between base stations is needed. The individual base stations individually perform a scheduling of the mobile station and transmit scheduling assignments to the mobile station (see paragraphs [0030], [0041], [0042], [0043] and [0046]).

Hence, there is no indication within Love et al. that a base station is considering any scheduling information for the mobile terminal received from the serving base station (also scheduling the mobile terminal).

In addition, there is no passage in Love et al. that would suggest that the other base station is scheduling another (second) mobile terminal, based on the information that informs the at least one other base station on the applicability of allocated maximum amount of uplink resources for uplink data transmissions on the individual HARQ processes by the (first) mobile terminal scheduled by the scheduling base station.

From the above, it is apparent that Love et al. bears little if any relevance to the subject matter of Applicants' claim 38.

Legg et al. has been cited as allegedly disclosing transmitting information from at least one scheduling base station to at least one other base station, citing col. 6, lines 15-34 which

refers to a resource allocation communicated to a relevant base station. However, the scheduling concept of Legg et al. is substantially different from that in the Applicants' claimed invention, and further, Legg et al. fails to teach the scheduling of another (second) mobile terminal by another base station than the scheduling base station scheduling the (first) mobile terminal, in accordance with the subject matter mentioned in Applicants' claim 38. Thus, Legg et al. cannot be considered as curing the deficiencies of Love et al. discussed above.

In fact, as noted above, the Office Action does not even allege that either of Love et al. or Legg et al. teaches or suggests an operation wherein a scheduling (first) base station transmits scheduling information to another (second) base station, and the scheduling base station schedules communication with a first mobile terminal based on the coordinated scheduling information and the other base station schedules communication with a second mobile terminal (different from the first mobile terminal) based on the coordinated scheduling information.

Accordingly, for at least the above reasons, the Applicants submit that the teachings of Love et al and Legg et al., even if combined as proposed in the Office Action, would still lack the above-noted features of instant claim 38, and thus, the individual or combined teachings of these references fail to render obvious the subject matter of claim 38. Independent claim 61 similarly recites the above-mentioned subject matter distinguishing method claim 38 from the applied references, but with respect to an apparatus. Therefore, the rejections applied to claims 38 and 61 are considered to be obviated and allowance of claims 38 and 61 and all claims dependent therefrom is deemed to be warranted.

In view of the above, it is submitted that this application is in condition for allowance, and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,

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